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PATENT APPLICATION
PO7917
HE-177

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION OF)
JÜRGEN WIRTH ET AL) GROUP ART UNIT: 1732
SERIAL NUMBER: 10/777,495) EXAMINER:
FILED: February 12, 2004) Monica Anne Huson
TITLE: PROCESS FOR PRODUCING)
POLYURETHANE MOLDINGS)

RESPONSE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The Office Action on the above-identified application dated July 27, 2006 has been received and its contents noted. The following is in response thereto.

REMARKS

The present invention is directed to a process for producing a polyurethane molding in which at least one isocyanate component and at least one polyol component are conveyed in shot operation for a predetermined time-interval Δt into a mixing chamber at predetermined volumetric flow-rate $\dot{V}_{s/iso}$ for the isocyanate

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an enveloped addressed to: Commissioner for Patents, Alexandria, VA 22313-1450 October 27, 2006

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Signature
October 27, 2006
Date

and $\dot{V}_{s/polyol}$ for the polyol and predetermined pressure $p_{s/iso}$ for the isocyanate and $p_{s/polyol}$ for the polyol. The isocyanate and polyol are then mixed in the mixing chamber to form a polyurethane reaction mixture and the polyurethane reaction mixture is discharged into a mold. In this process, prior to conveyance of the polyol and isocyanate components in shot operation, (1) the isocyanate and polyol are conveyed in circuit through circulation lines between the mixing chamber and their respective storage vessels, (2) the pressure of the isocyanate and of the polyol are measured by means of pressure sensors and transmitted to a control device, (3) the volumetric flow-rates of the isocyanate and polyol are adjusted while being conveyed through the circulation lines in such a way that the pressure of each of the isocyanate and polyol in the circuit corresponds to the predetermined pressures $p_{s/iso}$ and $p_{s/polyol}$ of the components for shot operation, and (4) the volumetric flow-rates $\dot{V}_{s/iso}$ and $\dot{V}_{s/polyol}$ of the isocyanate and polyol are adjusted by the control device during change-over from circulatory mode of operation to shot operation by adjustment of drive units of metering elements for the isocyanate and polyol.

Claims 1 and 4-7 stand rejected under 35 U.S.C. §102(b) as being anticipated by Soechtig (U.S. Patent 4,944,599). Applicants respectfully traverse this rejection.

Soechtig discloses an impingement mixing device in which constant pressure and flow volume is achieved by continuous closed feedback loop monitoring of the pressure and flow volume to effect a change in an adjustable pump setting and **servo displaceable nozzle needle**.

Soechtig does **not** teach or suggest the adjustment of volumetric flow rates while being conveyed through the circulation lines to the volumetric flow rate during shot operation as is required in Applicants' claimed invention. Rather, Soechtig teaches adjustment of the nozzle needle during the shot operation - not in circulation lines prior to shot operation.

Soechtig does not therefore disclose Applicants' claimed invention and does not therefore support the rejection of Applicants' claimed invention under 35 U.S.C. §102(b).

Withdrawal of this rejection is therefore requested.

Claims 2 and 3 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Brown (U.S. Patent 5,240,969). Applicants respectfully traverse this rejection.

Brown discloses low density reinforced reaction injection molded parts. Brown does not teach or suggest anything with respect to maintaining a constant volumetric flow rate during shot operation in the process used to make such parts.

The teachings of Brown can not therefore be construed in any manner which would lead one skilled in the art to Applicants' claimed process in which the volumetric flow rates of the isocyanate and polyol components are adjusted while being conveyed through the circulation lines to make them correspond to the volumetric flow rate during shot operation.

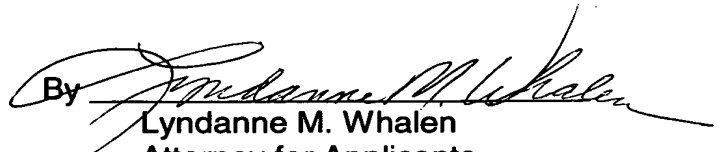
Applicants' claimed invention is not therefore rendered obvious by the teachings of Brown.

Further, since neither Soechtig nor Brown teaches a process in which the volumetric flow rates of the isocyanate and polyol components are adjusted while being conveyed through the circulation lines to make them correspond to the volumetric flow rate during shot operation, the teachings of those references can not be combined in any manner which would render Applicants' claimed invention obvious.

Withdrawal of this rejection is therefore requested.

In view of the above remarks, reconsideration and allowance of Claims 1-7 are respectfully requested.

Respectfully submitted,

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